

**Remarks to 20 April Final Rejection (Rejection)**

The issues in this submission are not presented in the order they appear in the Final Rejection, Applicant's 9 Feb 2006 Submission, or the preceding office action. Rather the issues are discussed by grouping the arguments to the issue to which they apply. Care has been taken to make sure that a response has been made with respect to each position delineated by the Examiner in the Final Rejection.

Applicant's 9 Feb 2006 submission (Submission) amended claim 57 to the closed end transition language using the phrase "consisting of". The consisting of language overcomes the rejection of claim 57 in view of Roulin et al since Roulin et al requires the addition of an SiOx layer (column 1, lines 52-56) and the consisting of language prohibits the use of the barrier layer.

The 20 April 2006 Final Rejection rejects the amendment to Claim 57 making the sheet "consist of" the polyester and heat sealable polyester, stating that an uncoated sheet is not claimed and that there is no support for the uncoated sheet in the specification. (Rejection at page 4, paragraph 3).

Applicant disagrees with both positions. The statement in the Final Rejection that an uncoated sheet is not claimed ignores the legal meaning of the transition phrase "consisting of". When something consists of a list of elements, the article is restricted to those elements. Claim 57 is therefore restricted to only those elements claimed and a layer of SiOx is not one of those elements.

Support for the uncoated sheet can be found throughout the specification, Attention is specifically called to the Summary Of The Invention, wherein

"the multi-layered material of the present invention is a material that comprises as essential layers a foamed sheet of polyester resin with density lower than  $700 \text{ kg/m}^3$  and, adhered to said sheet, a heat sealable film of polyester resin capable of realizing by heat sealing the closure of the container."

The Summary section describes the essential features of the invention and the consisting of transition in claim 57 limits the claims to the essential features of the invention. Moreover, the SiOx layer is considered optional and is an additional feature used to improve the gas barrier (Specification at page 4, lines 27-30). Forcing Applicant to include SiOx is tantamount to limiting the claims to an embodiment.

In response to Applicant's position that Roulin et al requires an SiOx layer with a carrier layer (Submission at page 8), the Final Rejection only addresses the carrier layer and states that Roulin et al does not require a carrier layer (Rejection at page 5, 1st paragraph). Whether a carrier layer is required is not relevant to whether the closed end transitional language (consisting of) which excludes a layer of SiOx distinguishes the claimed invention from Roulin et al. As stated earlier, Roulin et al is quite specific that the SiOx layer is a required feature of the package and states at column 1, lines 52 – 56.

“These objects are accomplished by a laminate having a substrate on which a layer of silicon oxide is applied by chemical plasma deposition. The silicon oxide that is deposited has the general formula SiOx...”

Since Roulin et al requires the presence of a layer of SiOx, and amended claim 57's closed end “consisting of” language precludes such a layer, Roulin et al cannot render obvious claim 57 and the claims dependent thereon (submission at page 7, last paragraph through page 8, 1<sup>st</sup> full paragraph)

The Final Rejection also asserts that the claimed invention of claims 57-61 has not been distinguished from Roulin et al because the criticality of the two layers has not been explained and it is not clear that the criticality is stated in the specification (Rejection at page 4, paragraph 7). Applicant disagrees. The criticality of the two layers has already been demonstrated in the 18 April 2001 Declaration of Arianna Giovannini already on the record. That Declaration was submitted June 7, 2001 and described experiments demonstrating that a foamed PET sheet without the heat sealable layer could not be folded without breaking.

The ability of the heat sealable layer to make the folded container is demonstrated in the specification at Example 2 where the polyester foamed sheet with the heat sealable material can be folded into the container. Additionally, the specification explains the use of the low melting point polyester to permit heat sealing of the container (Specification at page 4, lines 4-7).

Since the rejections in the Final Office Action have all been satisfied in the specification or the Declaration of Arianna Giovannini, the Examiner is respectfully requested therefore to reconsider the position of Roulin et al as it applies to claim 57 and its dependent claims. All the other rejections to those claims rely on prior art in combination with Roulin et al and since Roulin et al is no longer applicable a notice of allowance for claims 57-61 is warranted.

The remaining issues are

- 1) Recyclability
- 2) The Improper Combination of
  - a) Kimura et al with Roulin et al
  - b) Wilson et al with Roulin et al
- 3) Declaration of Dr. Nowak.

#### **Recyclability**

The Final Rejection agrees with Applicant's position that the containers of Roulin et al are not entirely recyclable and the containers of Wilson et al are not recyclable, but maintains that recyclability is not relevant since recyclability is not claimed. This is not responsive to the Applicant's position that absent recyclability, there is no motivation to modify Roulin et al in the manner claimed by the invention. In fact, Roulin et al teaches a non-recyclable container and therefore teaches directly away from the modifications proposed in the various Office Actions, in particularly limiting the sheet to just polyester and the heat sealable coating. The same rationale applies to Wilson et al. Applicants have repeatedly requested for the motivation to combine the elements of Roulin et al in the manner suggested by the Examiner and none has been provided. This is particularly critical as Roulin et al teaches that the container not be recyclable, but disposable and the

only motivation in the record to make all the elements of a package of the same material is to further recyclability. Since there is no motivation to arrange the elements in the manner suggested in the office actions, no prima facie case of obviousness has been established. As Roulin et al is central to all the rejections, the Examiner is requested to allow all the remaining claims.

#### **Improper Combination of Kimura et al with Roulin et al.**

The Final Rejection states that it is not clear why Kimura et al cannot be combined with Roulin et al (Rejection at page 4, 4<sup>th</sup> full paragraph). Clarity is added to arguments later on in the submission and discussed below.

Applicant continues to maintain that no prima facie case of obviousness has been presented because one of ordinary skill in the art would not combine the sheet of Kimura et al with Roulin et al because the two packages are entirely different in use, manufacture, and utilization and the substitution of the non-transparent polyethylene terephthalate sheet of Roulin et al, with the transparent polyethylene naphthalate sheet of Kimura et al is teaching away from Roulin et al.

The Final Rejection states that the transparency of Kimura et al and the non-transparency of Roulin et al is not relevant because Kimura is only cited for the teaching that it would be obvious for one of ordinary skill in the art to provide for the claimed crystallinity (Rejection at page 5, paragraphs 2 and 3).

This position regarding transparency does not respond to Applicant's Submission that one of ordinary skill would not be motivated to substitute a transparent sheet with a non-transparent sheet. In fact, as noted in the Final Rejection, Roulin et al teaches polyethylene terephthalate (Rejection at page 5, first paragraph), while the stated objective of Kimura et al is to replace the polyethylene terephthalate with transparent

polyethylene naphthalate.<sup>1</sup> As such, the references clearly teach away from each other, again denying the prima facie case of obviousness.

Roulin et al teaches a foamed non-transparent polyester, specifically polyethylene terephthalate, while Kimura et al teaches to replace the polyethylene terephthalate with polyethylene naphthalate to maintain transparency of the container in heated conditions. Since combining the foamed non-transparent sheet of Roulin et al would destroy the utility of the clear non-transparent sheet of Kimura et al, the combination is not permissible, again negating the prima facie case of obviousness.

Again, the Final Rejection notes that transparency is not important because Kimura et al is cited only for the level crystallinity claimed in the instant invention. The position therefore, in the Final Rejection is that one of ordinary skill in the art would be motivated to combine the references because one would find the crystallinity limitation. As pointed out in the Feb 9 submission, the combination must be based solely upon the knowledge of the prior art, not whether one would find the claimed limitation in the reference (submission at page 10, 1<sup>st</sup> full paragraph).

The Final Rejection states that the motivation to combine the two references is present because they both mention sheets (Rejection at page 6, 2nd full paragraph). One does not combine art based upon broad common elements. As presented in the Submission, this ignores the fact that the prior art must be taken as a whole, and as a whole, there is no motivation to combine the references because:

- 1) The containers are different, the manufacturing routes are different and their use is different.
- 2) The container in one is transparent, the container in the other is not transparent.

The references teach away from each other because Kimura et al teaches to replace the polyethylene terephthalate claimed by Roulin et al with transparent

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<sup>1</sup> Kimura et al teaches that the polyester used have a glass transition temperature of not less than 80°C. It is well known the polyethylene terephthalate has a glass transition temperature below 80°C.

polyethylene naphthalate, and one of the reasons cited to replace the polyethylene terephthalate with polyethylene naphthalate is because the polyethylene terephthalate has poor transparency in the uses described by Kimura et al. The question still remains then, why one of ordinary skill in the art would combine Kimura et al with Roulin et al, when Roulin et al teaches non-transparent (foamed) polyethylene terephthalate and Kimura et al teaches to replace polyethylene terephthalate because it becomes non-transparent. Therefore, whether Kimura et al discloses the claimed crystallinity limitation is irrelevant since no prima facie case of obviousness has been presented and one of ordinary skill in the art would not combine Kimura et al with Roulin et al.

Without Kimura et al, the claimed crystallinity limitation is not present in the prior art, thus overcoming all the stated rejections. The Examiner is respectfully requested to enter a notice of allowance for all the remaining claims.

#### **Wilson et al with Roulin et al.**

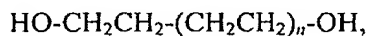
The combination of Wilson et al with Roulin et al is first mentioned in the Final Rejection (Rejection at page 3, last paragraph to page 4, first paragraph) in response to Dr. Nowak's Declaration that one of ordinary skill in art knows that Wilson et al teaches certain polyesters made from di, tri and polyethylene glycol and aliphatic acids and it does not teach polysters made from ethylene glycol and aromatic acids as taught in Roulin et al<sup>2</sup> or claimed in the instant invention. (Declaration #1, point 12, last sentence and point 13) The Final Rejection's response is that if Wilson et al comprises polyethylene glycol, it comprises ethylene glycol and that while Wilson et al does not explicitly teach a foamed density, one would arrive at a low density through routine optimization (Rejection at page 3, last paragraph to page 4, 1<sup>st</sup> paragraph).

A second declaration of Dr. Nowak is submitted with this response to further clarify the original points of why one of ordinary skill in the art considers the

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<sup>2</sup> As noted in the Final Rejection (page 5, first paragraph), Roulin et al teaches polyethylene terephthalate which is the reaction product of the aromatic diacid, terephthalic acid and mono-ethylene glycol, HO-CH<sub>2</sub>-CH<sub>2</sub>-OH, also described as HO-(CH<sub>2</sub>-CH<sub>2</sub>)<sub>n</sub>-OH, where n=1.

“polyesters” of Wilson et al to be polyurethanes and to respond to the Examiner’s position that a polyester made from polyethylene glycol comprises ethylene glycol. As noted in Declaration #2, at point 11, one of ordinary skill knows polyethylene glycol to describe a molecule having one or more oxybisethyl units with two hydroxyl (alcohol) groups attached at the end of its polymer chains. Such a molecule is described as



where  $n$  is an integer.

In the case of di-ethylene glycol,  $n$  is 1 and in the case of tri-ethylene glycol,  $n$  is 2. This is consistent with both Wilson references that state that the glycol is di-, tri, or polyethylene glycol (‘832 column 2, lines 46-47; ‘418, column 1, line 64-65). This listing is in increasing order of the number of oxyethyl units starting with 1 and then concludes with the class description that excludes mono-ethylene glycol (when  $n$  is 0). Therefore by definition, the certain polyester described in both Wilson references cannot include ethylene glycol, the essential glycol for polyethylene terephthalate and polyethylene naphthalate.

The Final Rejection states it is not clear why Wilson et al cannot be combined with Roulin et al (Rejection at page 4, 5<sup>th</sup> paragraph). As with the other clarity argument, the reasons were not argued at that point in the submission and presented later.

The Final Rejection’s response to Dr. Nowak’s Declaration that one of ordinary skill in the art knows the polyesters described in Wilson et al to not be polyesters as described by Roulin et al and claimed in the instant invention reiterates that Wilson et al teaches a polyester. (Rejection at page 5, 4<sup>th</sup> paragraph and page 7, 3<sup>rd</sup> paragraph) This is not responsive to the Applicant’s arguments and ignores the objective evidence placed in front of the Examiner. The objective evidence in front of the Examiner is that in spite of Wilson et al’s use of the word polyester, one of ordinary skill in the art knows the “polyesters” in Wilson et al to be polyurethanes which are the reaction products of aliphatic polyesters made from glycols other than ethylene glycol (MEG) and that these are not the type of polyesters described by Roulin et al or claimed in the invention. Declaration #1 provides explicit detail which is incorporated into Applicant’s remarks and further clarified in Declaration #2 as to why one of ordinary skill in the art knows the

polyesters of Wilson et al to be polyurethanes and not the polyesters mentioned by Roulin et al.

This view of one of ordinary skill in art remains uncontested by the Examiner. The Final Rejection states that polyesters are disclosed by Wilson et al and polyesters are disclosed by Roulin et al and that the references are therefore combinable, even though one of ordinary skill in the art knows one of them to be polyesters and the other to be polyurethanes and the polyesters are not the same. By not considering the objective evidence presented, the Examiner has not met his duty.

The Final Rejection states that Wilson et al is combinable with Roulin et al because both teach sheets. However, as argued before, teaching similar elements is not motivation. In fact, as argued in the 9 February Submission and in Dr. Nowak's Declaration #1, one would not use the "polyesters" of Wilson et al because one of ordinary skill knows them to be toxic (Submission at page 10, 2<sup>nd</sup> Paragraph and Declaration at 14). In fact, the use of toxic polyurethanes of Wilson et al would render the package of Roulin et al useless for its intended purpose – food packaging, thus the references teach away from each other. Since the references teach away from each other, their combination is not proper.

There is no response in the Final Rejection to Applicant's position that one of ordinary skill in the art would not combine the references because one of ordinary skill in the art would not use the toxic "polyesters" of Wilson et al in food packaging. The Final Rejection "addresses" this point by stating that Declaration #1 only asserts that the compositions of Wilson et al are toxic and that the toxicity is not relevant because Wilson et al is only being cited to teach that a polyester, or other polymer, having low densities provides for a lightweight product.

Again, by not addressing the objective evidence regarding the view of one of ordinary skill in the art, the examiner has failed to meet his duty.



The reason the objective evidence must be considered is that regardless of why Wilson et al is being cited, one of ordinary skill in the art must be motivated to combine the toxic compositions of Wilson et al with Roulin et al to make a package for food. Since the toxicity destroys the utility of the primary Roulin reference, the references teach away from each other. Second, it is not true that Wilson et al "is only cited to teach that a polyester, or other polymer, having low densities provides for a lightweight product."

Wilson et al is being cited as teaching the claimed density limitation even though the limitation is not recited in the reference. The Examiner maintains that Wilson et al teaches a "low density" and that the [claimed density] is achievable through routine optimization.

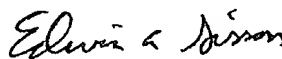
Even if Wilson et al is combinable with Roulin et al, there is still the question as to how one finds the claimed density limitation of an aromatic diacid reacted with monoethylene glycol using the teachings of a polyurethane made from reacting an aliphatic acid with polyethylene glycol in the presence of toxic toluene di-isocyanate "through routine optimization." This is particularly the case when neither Wilson reference teaches how to vary the density and one of ordinary skill in the art cannot find how to vary the density in the references either (Declaration # 2 at point 10).

Second, Examiner's expansion to other polymers, goes right to the point. According to the Examiner then, any reference teaching foamed polymers would contain the density limitation and be combinable.

It is believed that these responses have fully addressed the rejections noted in the final reject and the Examiner is kindly requested to issue a notice of allowance.

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Respectfully submitted,



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